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Prevalence of Aphthous Ulceration in patients attending Oral Diagnosis Clinics at School of Dentistry/University of Sulaimani for four academic years (2010-2014)

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Abstract
Background: *Recurrent aphthus ulceration represents a common inflammatory ulcerative condition encountered in daily dental practice. The prevalence rate of this condition in different region of the world had shown considerable variation throughout different epidemiological studies. The objective of the present study was to determine the prevalence and distribution of aphthous ulceration in comparison to the other oral lesions in patients attending Oral Diagnosis Department at School of Dentistry/ University of Sulaimani in four academic years.*
Patients and Methods: *This was a retrospective study performed on 59 patients recorded with aphthous ulceration at Oral Diagnosis clinic of the School of Dentistry at the University of Sulaimani for four consecutive academic years (from 2010 to 2014) by using the available case sheet files which included medical and dental history of the patients and relevant etiological factors (if present).*
Results: *A total of 400 patients were recorded with a variety of oral lesions among these fifty nine (15%) patients were diagnosed with aphthous ulceration. Minor aphthous ulceration was the most common types (46 patients about 78% of all) and the majority was identified in male patients (33 patients about 56% of all) than female patients (26 patients about 44% of all). The highest numbers of patients were seen in the younger age groups (21-30 years of age) and the most frequent sites for the occurrence of aphthous ulceration was the internal surface of the lower lip (21 patients) followed by buccal mucosa (15 patients). Regarding the possible etiological factors for the development of aphthous ulceration in a large extent of patients were unknown, only minorities of patients were reported emotional stress as a possible etiological factor.*
Conclusions: *Recurrent aphthous ulceration was more common in young males and the ulcers were mostly found on the non-keratinized surfaces of oral mucosa of lips and buccal mucosa.*
Keywords - *aphthous ulceration, major, minor, herpitiform ,oral mucosa*

I. Introduction

The term "aphthous" has been derived from a Greek word "aphtha" which means ulceration [(1)]. The disease is characterized by recurring painful ulcers of the mouth that are round or ovoid and have inflammatory halos [(2)]. A prodromal burning sensation lasting 24 to 48 hours can often precede the onset of ulcers [(3)]. Aphthous ulcers typically appear first in childhood (patients often have a family history of recurrent aphthous stomatitis) and tend to recede around the third decade [(4)].

Clinically aphthous ulcers are classified on the basis of ulcer size in to major, minor, and herpetiform. Minor aphthous ulcers are small (less than one cm in diameter), well defined, shallow, and heal within 2 weeks without scars .Major ulcers are bigger, deeper, and take up to six weeks to heal leaving a scar behind. Herpetiform ulceration is also characterized by small (3-6mm), shallow ulcers which takes weeks to heal, but with many numerous ulcers at once [(5)].

Various factors have been suggested to precipitate outbreaks of recurrent aphthous stomatitis in predisposed persons, including oral trauma, the cessation of smoking (for reasons that are unclear) [(6)], anxiety or stress [(7)], sensitivities to food (e.g., to preservatives and agents such as benzoic acid or cinnamaldehyde), and hormonal changes related to the menstrual cycle [(8)]. However, evidence to support the causative role of these factors is scarce [(2)].

The reported prevalence of aphthous ulcers were varied from 5-66% among different nations [(9)]. In Sulaimani city the prevalence of recurrent aphthous ulceration reached about 28.2% in the study performed by Abdullah [(10)].

Furthermore, cross-sectional studies suggest that recurrent aphthous stomatitis is more common in women, in people under the age of 40 years, in whites, in nonsmokers, and in people of high socioeconomic status [(2)]. Even though not life threatening it can significantly affect the health related quality of life of an individual [(5)].

The present study aimed to determine the prevalence of aphthous ulceration in regard to the other oral lesions in patients attending Oral Diagnosis Department at School of Dentistry/ University of Sulaimani in four academic years and to find possible effect of local and systemic factors on aphthous ulceration development.

II. Patients And Methods

This retrospective study was performed on 59 patients attended oral diagnosis clinic of the School of Dentistry at the University of Sulaimani for four consecutive academic years (from 2010 to 2014) by using the available case sheet files which included medical and dental history of the patients and relevant etiological factors(if present).

Descriptive statistical analysis was performed for the distribution of the patients by age groups, gender and types of the aphthous ulcer. Possible aetiological factors and the medication prescribed to alleviate the symptoms of the ulcer were also determined. Furthermore, the distributions of the aphthous ulcer in different oral cavity sites were also recorded.

III. Results

The retrospective analysis of different oral lesions in patients attended oral medicine clinic during four consecutive academic years (2010-2014) is shown in table 1. A total of 400 patients were recorded with different types of oral findings; the majority of the patients were recorded with TMJ problems, while oral lesions other than aphthous ulceration comprised (21%) and only fifty nine (15%) patients were diagnosed with aphthous ulcer.

The demographic features and the variances in distribution of aphthous ulceration in accordance with gender are elaborated in table 2 and figure 1. More than half of patients with aphthous ulceration were recorded in male (33 patients), whereas twenty six patients (44%) were females.

Furthermore, the study explored the distributions of aphthous ulcer in different sites of the oral cavity. The majority of ulcer were diagnosed at the internal surface of the lower lip (21 patients) followed by buccal mucosa (15 patients); whereas the least common sites for occurrence of aphthous ulceration were the tip of tongue and the floor of mouth (2 patients for each), more details are shown in table 3.

Moreover, the result of this study also revealed that minor aphthous ulceration represented the most common types in comparison to the major and herpetiform aphthous ulcer (46 patients versus 12 and 1 patients respectively) details are shown in figure 2.

The annual distribution of aphthous ulceration in the four academic years showed discrepancies. As shown in table 4 the total number of patients recorded with aphthous ulceration in academic year (2010-2011) were 11 patients, while in academic year (2011-2012) it was only 10 cases which was represent the least number of patients with aphthous ulceration among these four academic years, whereas the number of recorded patients in the two academic years (2012-2013) and (2013-2014) were comparable with 19 cases for each.

Regarding the distribution of aphthous ulceration according to their types in different age groups are shown in table 5. The majority of patient who were diagnosed with aphthous ulceration were in their 3rd decade of life, while the minority of the cases were presented in the 5th decade of life.

In addition the study results also implied that the possible etiological factors for the development of aphthous ulceration in a large extent of patients were unknown, only a minority of patients were reported emotional stress as a possible etiological factor (details are shown in table 6) .

Finally this study also investigated the medication prescribed to alleviate and treat patients with aphthous ulceration. Most of the patients received a mixture of malox, alarmine syrups and chlorohexidine mouth rinse as a treatment options followed by topical application of kenalog in orabase for seven (12%) patients, other treatment modalities are shown in table 7.

IV. Discussion

Recurrent aphthus ulceration represents a common inflammatory ulcerative conditions encountered in daily dental practice. The prevalence rate of this condition in different region of the world had shown considerable variation throughout different epidemiological studies [10, 11, 12].

The present study results indicated that in the past four academic years the prevalence of aphthous ulceration in comparison to other oral lesions reached about 15%. This result was nearly comparable to the study performed by Axell and Henricsson [13] in an adult Swedish population (about 17%). In contrast to our findings higher prevalence of aphthus ulceration was reported by in our province (about 28%) [10, 14] . This could be explained by the small sample size of our study (including patients attended oral medicine clinic at school of dentistry) rather than sample collection at specialized dental center in Sulaimani city. Another explanation could be the fact that most of the patients in oral medicine clinic at University of Sulaimani were seeking dental treatment at conservative department.

Among the fifty nine patients were diagnosed with aphthous ulcer, male predominate in experiencing the ulcer than female patients. This finding contradicts the results of other investigators who showed that recurrent aphthous ulceration has predilection among women [2, 10, 14, 15, 16, 17], however, similar results were reported by Rivera-Hidalgo et al. [18] with a higher male prevalence.

Our data revealed that most affected patients were young and between 21-30 years of age. This observation was compatible with previous studies in our country [10, 14]. In contrast other studies which had been performed in England and Middle East countries reported that recurrent aphthous ulcers started in childhood and seen in all ages especially adults [16, 19, 20].

In accordance with previous investigators the majority of aphthous ulceration was of minor type followed by major and herpetiform aphthous ulcerations [14, 16, 17, 20, 21].

Regarding the oral site presentation of aphthous ulcerations; the majority of ulcer were diagnosed at the internal surface of the lower lip followed by the buccal mucosa. Similar results were declared by Abdullah [10] in our city (Sulaimani) and a study conducted by Safadi [22] in Jordanian dental patients. This may probably because these two sites are more prone to trauma in comparison to other oral sites

V. Conclusion

Recurrent aphthous ulceration represents a common mucosal ulceration of the oral cavity; most of the ulcer was presented in males. The age group (21-30) years old comprised the highest number of patients. Minor aphthous ulceration was the most common type of aphthous ulceration, whereas herpetiform ulceration was the rare form of aphthous ulceration. The ulcers were mostly found on the non-keratinized oral mucosa of lips and buccal mucosa.

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VI. Tables And Figures

Table 1: the total number of patients recorded with various oral lesions in department of oral medicine in School of dentistry /from 2010 to 2014

	No. of cases from 2010 to 2014	%
Aphthous ulcer	59	15%
Other oral lesions	82	21%
TMJ problems	259	65%
Total	400	100%

Table 2: Distribution of aphthous ulcer according to gender and types

Gender	Minor	Major	Herpetiform	Total	%
Male	28	4	1	33	56%
Female	18	8	0	26	44%
Total	46	12	1	59	100%

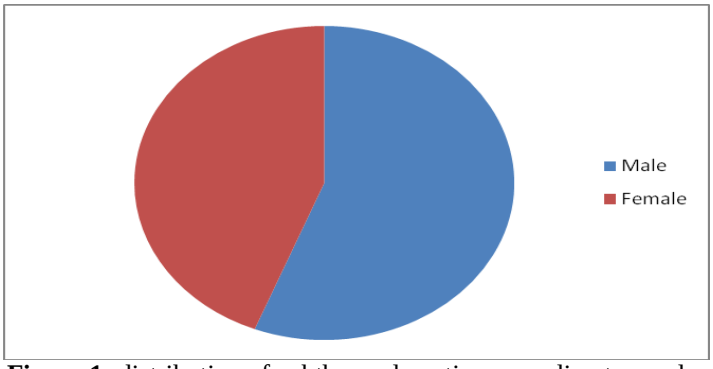

Figure 1: distribution of aphthous ulceration according to gender

Table 3: Distribution of aphthous ulcer according to the oral site presentation

Site	Male	Female	Total	%
lateral surface of the tongue	1	3	4	7%
ventral surface of the tongue	2	2	4	7%
tip of the tongue	0	2	2	3%
buccal mucosa	7	8	15	25%
mucobuccal fold	6	1	7	12%
upper lip	3	1	4	7%
lower lip	12	9	21	36%
floor of mouth	2	0	2	3%
Total	30	26	59	100%

Table 4: the annual number of patients with different types of aphthous ulcer

Type	2010-2011	2011-2012	2012-2013	2013-2014	Total
Minor	7	7	13	19	46
Major	4	2	6	0	12
Herpetiform	0	1	0	0	1
Total	11	10	19	19	59

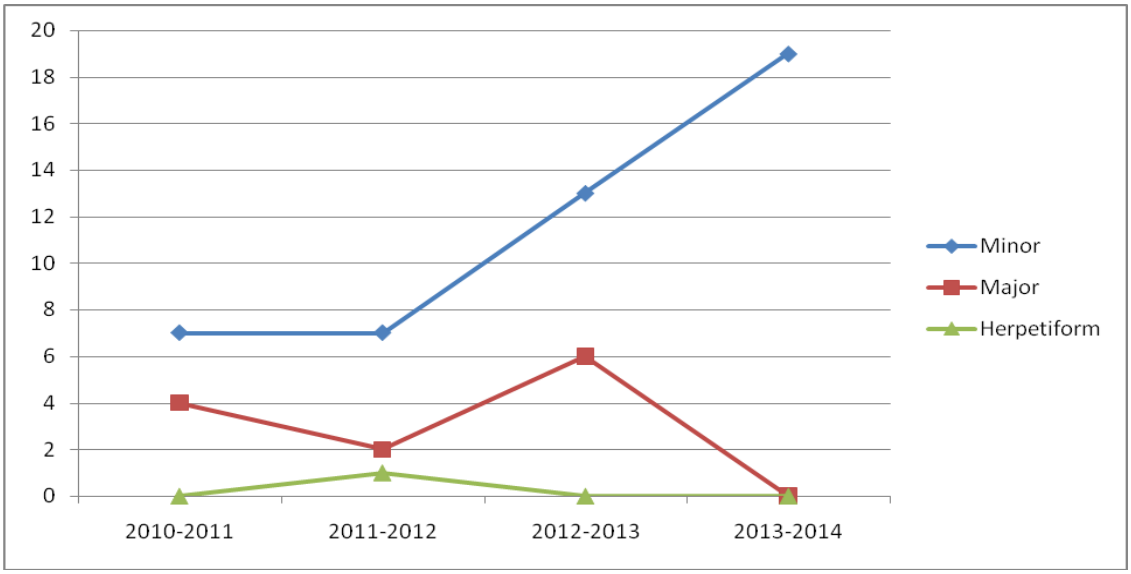

Figure 2: the annual number of patients with aphthous ulcer which were recorded in department of oral medicine, School of Dentistry .

Table 5: The distribution of aphthous ulcers patients according to their age and types

Type	(11-20)y	(21-30)y	(31-40)y	(41-50)y	Total	%
Minor	9	34	2	1	46	78%
Major	0	6	5	1	12	20%
Herpetiform	0	0	1	0	1	2%
Total	9	40	8	2	59	100%

Table 6: the possible cause for the development of different types of aphthous ulcer

possible cause	No. of cases	%
stress	10	17%
unknown	49	83%
Total	59	100%

Table 7: medication prescribed for the patients with reccurent aphthous ulcer.

Treatment	No. of patients treated	%
reassurance + kenolog	7	12%
malox + alarmine + CHX mouth rinse	37	63%
malox + alarmine	6	10%
kenolog + malox + alarmine	3	5%
dexon + malox + alarmine	6	10%
Total	59	100%